

also show through the body of the shell. Beak small and smooth, the cardinal tooth strongly projecting.

Lon.  $2\frac{1}{2}$  mm.; alt.  $2\frac{1}{2}$  mm.

LOCALITY. Wood's Bluff, Ala.

REMARKS: This species is mentioned by Prof. Dall as *Verticordia* sp. indet. The description is made from a good specimen found by the writer. The shell is rather small for even this genus.

ACTEON POMILIUS *Con.*, var. MULTANNULATUS. n. var. Pl. v. fig. 11.

The specimen here figured differs from the typical form by having much more numerous raised lines with shallower interspaces. The spire is higher and the shell more slender. The *Acteon* found by me at Wood's Bluff is different from the form figured by Prof. G. D. Harris, not having any smooth space on the body-whorl. These so-called species appear to belong in one basket.

Height 9 mm.; diam. 6 mm.

LOCALITY. Six miles east of Thomasville, Ala., Wood's Bluff beds.

LEPTON VAUGHANI n. sp. Pl. V, fig. 12.

Shell small, surface smooth and shining; lines of growth very fine, shell rather triangular in shape, longer than high; slightly inequilateral. Muscular scars showing, the posterior one rather long and narrow.

Long. 3 mm.; alt. 2 mm.

LOCALITY. Wood's Bluff, Ala.

REMARKS: This species seems to be an undoubted member of this genus, as it has the proper dentition; some specimens are equilateral. Named in honor of T. Wayland Vaughn of the U. S. Geological Survey. This seems to be the first *Lepton* found in the Eocene.

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#### NEW LAND SHELLS FROM ARIZONA AND NEW MEXICO.

BY GEO. H. CLAPP.

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*Bifidaria* (*Chænaxis*) *tuba* subsp. *intuscostata*.

Differs from the type, externally, by its larger size, length 4, diam. 2 mm. and the greater number of whorls,  $6\frac{1}{2}$ . The smallest normal

shell measured is  $3\frac{1}{4} \times 1\frac{2}{3}$  mm. with about  $5\frac{1}{2}$  whorls, and the largest  $4\frac{1}{8} \times 2$  mm. with  $6\frac{3}{4}$  whorls. Internally there is a strong lamella on the columella, which can only be seen by breaking the shell, *about 2 whorls long* in fully adult shells. Examination of a large number of shells of all ages shows that this lamella is a mark of maturity, as it does not appear until after the angular, parietal and outer columellar lamellæ have begun to form.

The arrangement and number of the other lamellæ and plicæ are the same as in the type, with the usual variation as to extra denticles, ordinarily seen in *Bifidaria*. The body whorl is decidedly angular at the umbilicus, and flattened below the periphery.

Foothills of the Plumosa Range, about eight miles east of Quartzsite, Yuma county, Arizona, in drift. Collected by Mr. Geo. S. Hutson.

Type No. 5769 of my collection. Cotypes in Academy Natural Sciences, Philadelphia, and U. S. National Museum.

In the peck or more of drift from which these shells were picked, there were only two other species, *Bifidaria hordeacella* Pils. and *Pupoides marginatus* (Say), with not even a fragment of anything else.

In the Eagle Tail Mountains, twelve miles north of Kofa, Yuma county, at an altitude of about 2,000 feet, Mr. Hutson found a form which is apparently intermediate between the type and *intuscostata*, in that the columellar lamella is weaker and does not extend in so far. This is probably the form referred to by Pilsbry in Proc. A. N. S., 1906, page 146, taken by the late Dr. Ashmun at Tempé, Maricopa county. The habitat given by Hutson is: "In moist places among piles of loose rock covered by decaying cactus. Associated with these were also *Bif. hordeacella* and *P. marginatus*."

The finding of this species in Cochise, Maricopa and Yuma counties, shows a distribution of *B. tuba* clear across the territory.

#### ASHMUNELLA KOCHII n. sp.

Shell very much depressed, almost flat above, convex below, carinated, the carina about in the plane of the upper surface; sutures well impressed, whorls  $5\frac{1}{2}$ ; surface almost smooth, with faint and closely-set incremental lines; nuclear whorl and a half finely granulated; base convex, flattened around the umbilical region; umbilicus deep, about  $1\frac{1}{4}$  mm. wide, showing a full turn of the penultimate

whorl, termination of the body-whorl sharply descending at the aperture to about the middle of the whorl. Aperture very oblique; lip obtusely angled and almost perpendicular below the middle of the whorl; strongly constricted behind the reflected lip; peristome well expanded above, narrower below, somewhat flexuous, united over the body by a thin callus; parietal lamellæ two, converging, but not united at the inner end into a V; the lower lamella stout, sinuous, the outer end bent sharply towards the umbilicus; the upper lamella low, narrow and straight, starting near the upper insertion of the lip and terminating back of the front end of the lower lamella; basal part of the peristome with two strong lamellæ transverse to the lip, the upper ends converging and united at the base on the lip, forming a U; a broader and less transverse lamella set more deeply within the aperture on the upper lip, a small internal lamella on the base of the body whorl about three or four mm. long, showing faintly through the shell.

Greater diameter  $20\frac{1}{2}$ , lesser 18, alt.  $6\frac{3}{4}$  mm. Black Mountain, at the southern end of the San Andreas Range, Donna Ana county, New Mexico, at an elevation of about 6,800 feet.

This interesting shell was first collected by Mr. Walter E. Koch over a year ago. He sent me one perfect and one broken shell. Lately he has sent me three additional specimens, also dead. He reports dead shells quite plentiful in the crevices of a limestone cliff, but was unable to find living ones. I take great pleasure in naming the shell after him.

Type no. 5765 of my collection.

*A. kochii* is undoubtedly closely related to *A. mearnsii*, but is very much larger, more strongly carinated, and differs markedly in the umbilical region.

Both of these species will be figured on plate VI, to appear next month.

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#### NOTES ON THE GENUS STROBILOPS.

BY HENRY A. PILSBRY.

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The small forest-snails known as *Strobilops* are spread throughout all parts of North America east of the Rockies where sylvan conditions prevail, from Canada to Florida, Mexico and Central America.